STANDARD OPERATING PROCEDURE NO. 9

MANAGEMENT AND DISPOSAL OF RESIDUALS

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3.0 PURPOSE AND SCOPE

The purpose of this document is to define the standard operating procedure (SOP) for disposal of sediment, water, personal protective equipment (PPE), and other potentially contaminated materials generated during Newark Bay Study Area Remedial Investigation Work Plan (RIWP) operations.

This SOP provides procedures for handling potentially contaminated sediment, water, PPE, and other materials during coring and sampling activities through their ultimate disposal. Specific information regarding handling and disposal of residuals is provided in the IWP.

This SOP may change depending upon field conditions, equipment limitations, or limitations imposed by the procedure. Substantive modifications to this SOP shall be approved in advance by the Facility Coordinator (FC) (or Alternate FC) and the United States Environmental Protection Agency (USEPA) Remedial Project Manager. The ultimate procedure employed will be documented in the Newark Bay RI Report.

Other SOPs will be utilized in conjunction with this SOP, including:

- SOP No. 1 – Field Documentation;
- SOP No. 3 – Decontamination;
- SOP No. 6 – Sediment Collection Using Hand Coring Device;
- SOP No. 7 – Sediment Collection Using Vibracoring Device;
- SOP No. 8 – Core Processing; and
- SOP No. 10 – Sediment Collection Using Grab Sampling Device.

4.0 PROCEDURES

Potentially contaminated sediment, water, PPE, and other materials will be classified into three categories: (1) solid materials consisting of sediments, sediment samples returned from the laboratory, used polybutyrate core tubes, used PPE, and other materials used in the handling, processing, and storage of sediment (addressed in Section 4.2); (2) liquid wastes such as waste water, decontamination water, and aqueous samples returned from the laboratory (addressed in Section 4.3); and (3) spent and residual chemicals (liquids) from decontamination. Sediment from cores that is not processed for chemical or radiochemical analysis may be either archived or disposed of, and will be segregated and handled separately according to their classification. To the extent practical, liquids generated during coring and core processing operations should be separated from the solid material. Each type of material should be handled in the manner described in this SOP.

4.1 EQUIPMENT LIST

The following equipment list contains materials which may be needed in carrying out the procedures contained in this SOP. Not all equipment listed below may be necessary for a specific activity. Additional equipment may be required, pending field conditions.

- PPE or other safety equipment, as required by RIWP Volume 3 (Tierra, 2005);
- 55-gallon open-top drums (Department of Transportation [DOT] approved) with lid;
- 30-gallon (minimum) garbage bags;
- permanent marking pens and/or paint pens;
- duct tape;
- storage racks;
- small (cooler-size) storage containers;
- self-contained core storage facility;
- walk-in cooler or refrigerated trailer;
- chemical storage cabinet (meeting Occupational Safety and Health Administration [OSHA] and National Fire Protection Association [NFPA] Code 30 specifications/Factory Manual [FM] approved);
- logbook; and
- indelible ink pens.

4.2 SOLID MATERIALS

4.2.1 SOLID RESIDUALS FOR DISPOSAL

The remaining solid residuals generated during field activities will be sent for appropriate offsite disposal. These consist of two types of materials: non-sediment solid materials generated during the collection and processing of cores, including items such as used polybutyrate core tubes, aluminum foil from clean core tubes, PPE (e.g., gloves, Tyvek® suits, boot covers), and sediment not used for analyses (e.g., waste sediment such as that collected from the core "smear zone" and residual sediment). Non-sediment and sediment wastes will be segregated and temporarily stored in separate containers pending disposal. Loose sediment will be removed from non-sediment waste items prior to disposal and stored with other sediment wastes.

If recovered sediment is determined to be unusable after a core has been cut open, the sediment will be removed from the core tube and stored in an appropriate container for disposal as waste sediment. The used core tube will be stored and disposed of with the non-sediment solid wastes. Sediment residuals will be placed in 55-gallon drums, labeled, and stored temporarily until disposal in a manner approved by USEPA.

Non-sediment solid materials will be placed in 55-gallon drums or bulk bags and stored temporarily until they can be disposed of in a manner approved by USEPA. All drums and bags containing solids residuals will be labeled and handled as described in Section 4.4 of this SOP.

4.3 LIQUID WASTES

4.3.1 WASTE WATER

Waste water will be generated during sediment core processing and decontamination activities. Water mixed with detergent or chemicals will be drummed for disposal in a manner approved by USEPA. Water from gross decontamination (e.g., to wash sediment from core tubes) will be allowed to stand so that the sediment settles, and the water will be decanted and drummed. Solids remaining after the water is decanted will be handled according to Section 4.2.1 of this SOP.

Aqueous samples returned from the analytical laboratories will be temporarily stored at the sediment processing area until disposal in a manner approved by USEPA.

4.3.2 CHEMICAL LIQUID WASTES

Spent solvents, acids, and other residual chemicals generated during the decontamination

process (SOP No. 3 - Decontamination) will be collected and stored in appropriate containers. These containers will be stored temporarily at the sediment processing area until recycling or disposal in a manner approved by USEPA.

4.4 HANDLING AND TRACKING OF SOLID MATERIALS AND CONTAINERS

As they are generated during field activities, waste sediment and other solid waste materials will be placed in DOT-approved 55-gallon drums or 30-gallon bags. Solid waste materials which are initially placed in bags may be bulked into 55-gallon drums for storage. The following procedures will be followed for storing sediment and other solid waste in these drums:

- A drum number will be assigned to each drum by the FC or designee. The drum number will be clearly marked on multiple places on the drum;
- A log will be kept for each drum, listing the materials placed in that drum. All solid materials will be segregated based on the type of material (e.g., sediment, coring tubes, PPE, waste plastic, paper, or foil) and, to the extent practicable, by where they were generated (e.g., location within Newark Bay, etc.);
- Drums will be closed or covered at the end of the day's work;
- Collection drums may be reused at the processing facility after emptying; and
- Drums containing solid materials will be stored in a secured temporary facility until proper offsite disposal can be coordinated upon completion of the sampling event.

4.5 HANDLING AND TRACKING OF WASTE WATER AND CHEMICAL LIQUID WASTES AND CONTAINERS

As they are generated during field activities, waste water and chemical liquid wastes will be placed in separate DOT-approved 55-gallon drums. The following procedures will be followed for storing waste water and chemical liquid wastes in these drums:

- A separate drum will be used for each non-commingled chemical. Another, separate drum will be used for chemicals and/or water that have been mixed;

- A drum number will be assigned to each drum by the FC or designee. The drum number will be clearly marked on multiple places on the drum;

- A log will be kept for each drum, listing the materials placed in that drum;

- All drums will be closed or covered at the end of the day's work;

- Collection drums may be reused at the Sample Processing Area after emptying; and

- Drums containing waste water and chemical liquid wastes will be stored in a secured temporary facility until proper offsite disposal can be coordinated upon the completion of the sampling event.

4.6 SAMPLES RETURNED FROM OFFSITE LABORATORIES

Upon completion of the required chemical and/or radiochemical analyses, remaining sample material and emptied sample containers from the laboratory will be returned to the Sample Processing Area. Returned sample material will be transported under chain of custody procedures, and remain in custody until disposal. Upon receipt, the chain of custody form will be signed and the samples will be logged-in by a project staff member. The approximate volume of sample material and the condition of the containers in which the samples are returned will be checked and recorded in a logbook.

Samples will be separated into sediment, and aqueous sample groups; empty sample containers will be grouped accordingly by sample matrix. Sediment and aqueous samples will be placed in a DOT-approved 55-gallon drum until they are disposed of in a manner approved by USEPA.

5.0 QUALITY ASSURANCE

Disposal procedures will be documented in a logbook to ensure that disposal activities are conducted in accordance with the procedures outlined in the SOPs. Waste manifests will be obtained for solid and aqueous waste disposal to verify that proper transportation and disposal of these materials has occurred.

6.0 DOCUMENTATION

The FC or designee is responsible for documenting the handling and/or disposal of containers filled with solids or liquids generated during the RIWP activities in accordance with SOP No. 1 – Field Documentation. In addition, the following information should be included in the logbook (at a minimum):

- Name of person performing residual management or disposal activities;
- Date and time of activity;
- Information coordinating container numbers for drums or bags containing solid materials with sample numbers, core boring numbers, or origin; and
- Information coordinating origin of waste liquid (water or chemical[s]) with specific waste drum or tank.

7.0 REFERENCES

Tierra. 2005. Newark Bay Study Area Remedial Investigation Work Plan. Volume 3 Health and Safety/Contingency Plan. September.